2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

4 May 2010

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The capacity of the Comprehensive Nuclear-Test-Ban Treaty verification regime

Working paper presented by Spain on behalf of the European Union

1. The importance and urgency of the signing and ratification, without delay and without conditions and in accordance with constitutional processes, to achieve the early entry into force of the Comprehensive Nuclear-Test-Ban Treaty is the first of the 13 practical steps agreed upon at the 2000 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons for the systematic and progressive efforts to achieve complete disarmament.

2. A verifiable Comprehensive Nuclear-Test-Ban Treaty helps preventing both horizontal and vertical nuclear proliferation by limiting the possibility to develop new weapon designs for States already in possession of nuclear weapons, as well as creating significant obstacles on new States attempting to acquire such weapons. In this regard, the Treaty constitutes an essential pillar of the international nuclear disarmament and non-proliferation framework.

3. Since the Comprehensive Nuclear-Test-Ban Treaty was opened for signature in 1996, 182 States have signed and 151 have ratified the Treaty. Of the 44 annex 2 States required to ratify before entry into force of the Treaty, 35 have done so. All member States of the European Union, indeed all the countries on the European continent, have demonstrated their commitment to the Treaty by their ratification.

4. The European Union attaches the utmost importance to completing a credible and operational verification regime for the Comprehensive Nuclear-Test-Ban Treaty. This will provide the international community with independent and reliable means of ensuring compliance with the Treaty. In this sense, the European Union believes that the operational readiness of the verification regime can help promote its entry into force. The European Union is therefore involved both politically and financially in various ways in strengthening the verification regime and strongly supports the work of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization in this regard.

5. The global verification regime of the Comprehensive Nuclear-Test-Ban Treaty is being established by its Provisional Technical Secretariat. The verification regime

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includes the International Monitoring System (IMS), the International Data Centre and the on-site inspection regime. By the end of 2009, 83 per cent of the planned IMS station network had been installed. For the network to be fully installed and operational by the Treaty's entry into force, the full cooperation of all States hosting IMS facilities is crucial.

6. The IMS consists of several monitoring technologies; each primarily focused on detecting nuclear explosions in different media, including seismic and radioxenon detection for underground explosions, radionuclide and infrasound detection for atmospheric tests and hydroacoustic and radioxenon measurements for underwater tests. While individually contributing to the monitoring capabilities of the IMS, the different verification technologies complement each other, with the strengths of one technology benefiting the others.

7. The most likely scenario for a clandestine nuclear test made by a country seeking to acquire nuclear weapons is to perform an underground nuclear explosion. It remains important that States have confidence that the IMS is able to detect small underground nuclear explosions (around and below an explosion yield of 1 kiloton) and this has been one of the focuses in developing the detection capability.

8. Over the last decade, technologies that can assist in detection of underground nuclear tests have advanced significantly. One particular example is the technology for detection of radioactive noble gases, developed, inter alia, by France and Sweden and supported by joint actions of the European Union adopted in the framework of the Union's common foreign and security policy. This technique is now about 10 times more sensitive in comparison to the Comprehensive Nuclear-Test-Ban Treaty verification system designed in the mid-1990s. By supplementing a seismic measurement detecting and locating an underground explosion, the measurement of radioactive noble gas releases related to the same explosion provides evidence regarding the possible nuclear nature of the event.

9. The efficiency of this technology was demonstrated in October 2006 when the Democratic People's Republic of Korea conducted its first nuclear test, resulting in an approximate explosion yield of 0.7 of a kiloton. Not only was the explosion detected by the IMS seismic network, but radioactive noble gases were also detected by national technical means. The detection of radioactive noble gases confirmed the nuclear nature of the explosion. A measurement performed by an IMS radionuclide noble gas station was found to be compatible with the same conclusion.

10. The announced nuclear test by the Democratic People's Republic of Korea in May 2009 was also detected by the IMS seismic network. On that occasion, no noble gases could be detected by the surrounding IMS stations, but the detection by seismic sensors was accepted by the international community as a strong indication of a nuclear explosion. This seismic evidence alone would have provided sufficient grounds for the future Executive Council of the Comprehensive Nuclear-Test-Ban Treaty Organization to decide to launch an on-site inspection. The event in the Democratic People's Republic of Korea further served to illustrate that a robust and credible on-site inspection capability is an important component of the verification regime in order to fully clarify the character of any future suspicious event. Progress has been made here in recent years with the conduct of the integrated field exercise in 2008 and the follow-up actions now well in hand.

11. Based on recent experience and scientific development, it can be concluded that the combination of seismic and radionuclide detection, including, in particular, noble gas, together with the on-site inspection regime, which can bring to bear a number of effective inspection techniques, constitute a very powerful tool for detecting clandestine underground nuclear tests. Concerns that a fully functional Comprehensive Nuclear-Test-Ban Treaty verification regime would not detect fairly small explosion yields are therefore unjustified. In addition, the international scientific studies project, which was finalized at a three-day conference in Vienna in June 2009, showed that the verification technologies have improved substantially over the last five years.

12. However, ongoing and coordinated efforts, benefiting from continued interaction with scientific networks, help ensure that the latest verification technology developments are used in the Comprehensive Nuclear-Test-Ban Treaty verification regime in an effective manner, thereby further improving the possibility of detecting, identifying, and attributing possible nuclear tests.

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Working paper on strengthening International Atomic Energy Agency safeguards, presented by Spain on behalf of the European Union

Safeguards of the International Atomic Energy Agency (IAEA) are a key instrument to deter nuclear proliferation and to help ensure a responsible development of nuclear energy. The main aim of the IAEA verification regime is to prevent the diversion of nuclear material from peaceful activities, to "ensure that special fissionable and other materials, services, equipment, facilities, and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose" (article III A.5 of the Statute) and to reinforce mutual trust and transparency as well as to allow all States parties to the Treaty on the Non-Proliferation of Nuclear Weapons, under secure conditions and with mutual confidence, to exercise their inalienable right to develop research, production and use of nuclear energy for peaceful purposes without discrimination (Treaty article IV).

The European Union stresses the need for reinforcing the capabilities of IAEA for early detection and prevention of proliferation activities. The 2010 Review Conference constitutes an opportunity to foster this.

Existing instruments (comprehensive safeguards agreements and additional protocols) provide the legal framework. The Review Conference should recognize the comprehensive safeguard agreements together with additional protocol as the current safeguards standard. Strengthening IAEA under this framework implies making full use of its legal authority.

1. IAEA could be encouraged to:

(a) Make full use of the authority available to it, in particular:

(i) By pursuing the development of a State-level safeguards approach based on a comprehensive understanding of the activities and technologies implemented in States; by pursuing the implementation of integrated safeguards, internal pooling of the information available to the Agency, and conducting on-site control activities on the basis of the broadest possible analysis of all available information (information-driven safeguards);

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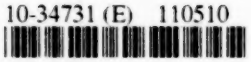

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(ii) By enforcing strictly the obligation resting on States to provide information and clarifications to the Agency, including, in particular, the provision of design information on nuclear facilities as soon as a decision is taken to build or authorize construction or to modify a facility, as well as the Agency's standing right to verify the design information over the life of a facility, including decommissioning, as provided for by revised code 3.1 of the general part of the subsidiary arrangement to the model comprehensive safeguards agreement;

(iii) By expanding the use of modern technologies for measurement and remote monitoring, continuous monitoring, and measures to detect undeclared activities, and by relying more broadly on information from and cooperation with strong independent national or regional safeguards systems, such as the European Atomic Energy Community (EURATOM);

(iv) By granting States assurances, as and where necessary and legitimate, that their confidential information will remain protected when IAEA fulfils its verification mission under comprehensive safeguards agreements in facilities that are described as defence-related;

(v) By effecting, whenever the Director General determines that circumstances call for it, a special inspection as provided for by paragraphs 73 (b) and 77 of the model comprehensive safeguards agreement (IAEA document INFCIRC/153). The secretariat could be encouraged to put in place appropriate technical and logistical preparedness measures in order to facilitate their implementation;

(b) Enhance the use of information relevant to the delivery of its mandate:

(i) By enhancing its capability to gather, assess and use information in areas that may be related to nuclear activities, but in which, however, no nuclear material is involved, inasmuch as this capability is necessary for the Agency to acquire a full comprehension of the nuclear activities of a State in relation to its commitments under its safeguards agreement;

(ii) By defining areas where information stemming from export control regimes or from bilateral nuclear cooperation agreements might be useful to the accomplishment of its mission. The rules under which such information could be made available to, and used by, the Agency should be carefully considered in order to protect the integrity of those regimes and confidentiality, while keeping in mind that IAEA is not and shall not become an export control regime;

(iii) By implementing an integrated use of information obtained from all sources IAEA deems credible, in order to enhance its capability to request adequate clarification from the State being investigated;

(c) Circulate more accurate information, notably in the event of non-compliance with commitments or cooperation regarded as inadequate over the long term:

(i) By broadening the information contained in its annual safeguards implementation report and, whenever the Director General determined that it would further the IAEA goals, by naming those States in regard to which difficulties remain, including in the section likely to be made public;

(ii) By reviving the IAEA Director General's former practice of submitting reports to and briefing the Security Council on a regular basis;

(d) Actively continue providing assistance to State parties, with a view to helping them to implement relevant instruments.

2. IAEA member States could be encouraged to:

(a) Pursue and intensify activities aimed at promoting the universalization of the IAEA safeguards regime (comprehensive safeguards agreement and additional protocol) by conducting demarches, organizing regional seminars and providing assistance in the implementation of relevant instruments;

(b) Sign, ratify and bring into force, for those States that have not done so yet, an additional protocol to their safeguards agreement;

(c) Accede to the amended small quantities protocol in the case of those States that have a small quantities protocol in force;

(d) Support the role of the Security Council in situations where commitments are being violated, as reaffirmed by Security Council resolution 1887 (2009);

(e) Adopt the "voluntary reporting scheme" on imports and exports of nuclear material and exports of specified equipment and non-nuclear material;

(f) Adopt voluntary transparency measures in order to restore confidence of the international community, in the event of outstanding issues, such as voluntary application of all or specific provisions of the additional protocol as a temporary measure in cases where an additional protocol is not in force; and granting IAEA the access it requests to information, sites, persons and entities prior to implementing its verification procedures. Introducing a voluntary code of best practices could be explored in this connection;

(g) Support in IAEA competent bodies the suspension of access to the Agency's technical cooperation and assistance programmes in appropriate areas, in case of non-compliance with obligations under the Treaty on the Non-Proliferation of Nuclear Weapons reported to the Board of Governors;

(h) Expand the range of actions IAEA might take beyond the current binary alternative of compliance/non-compliance and adopt guidelines relating to the responses the Agency could implement in different situations ranging, for example, from outstanding issues to violations of specific commitments, such as notification of such cases to the Board of Governors, informing the Security Council, and agreeing with involved States on action plans aimed at solving outstanding issues in a given time frame and providing them with the necessary guidance and assistance.